UNITED STATES OF AMERICA
IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

FRANK J. KELLEY, Attorney General for the State of Michigan, FRANK J. KELLY, ex rel. MICHIGAN NATURAL RESOURCES COMMISSION, MICHIGAN WATER RESOURCES COMMISSION, and HOWARD A. TANNER, Director of the Michigan Department of Natural Resources,

Intervenor-Plaintiffs,

vs.

BASF WYANDOTTE CORPORATION and FEDERAL MARINE TERMINALS, INC.,

Defendants.

_____/

Civil Action

No. 80-73699

HON. RALPH B. GUY, JR.

CONSENT DECREE

INDEX TO CONSENT DECREE

APPENDIX A

(1) A parcel of land located in Fractional Section 5, Town 4 South, Range 11 East, described as: Beginning at the point of intersection of the Easterly line of Riverview Drive, 86-feet wide and Easterly line of River Road, 106-feet wide and proceeding thence along the Easterly line of Riverview Drive, South 0 degrees 37 minutes 40 seconds East 518.57 feet; thence South 71 degrees 21 minutes 20 seconds East 61.78-feet; thence South 71 degrees 37 minutes 10 seconds East 792.28-feet to a point on the United States Harbor Line; thence North 31 degrees 41 minutes 30.4 seconds East 1133.37-feet along the United States harbor Line to a point, thence North 60 degrees 54 minutes 20 seconds West 1142.46-feet to a point on the Easterly line of River Road; thence South 28 degrees 55 minutes 40 seconds West 797.75-feet along the Easterly line of River Road to the point of beginning.

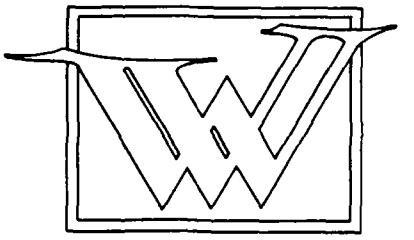
(2) All that part of Franctional Section 5, T.4 S., R. 11 E., City of Riverview, Wayne Co., Mich., described as: Beginning at a point in the S'ly line of "The Firestone Tire & Rubber Company" property which point is distant N. 60°54'20" W. 235.44-feet along the S'ly line of said property from the W'ly line of Jefferson Ave. (River Road) 106-ft. wide, thence along the S'ly line of said property N. 60°54'20"W. 424.55-ft.; thence on the curve to the right, radius 266.36-ft., a distance of 117.71-ft., chord of said curve bears N. 48°14'42" W. 116.76-ft.; thence N. 54°24'55" E. 22.00-ft., thence on the curve to the left, radius 244.36-ft., a distance of 107.99-ft., chord of said curve bears S. 48°14'42" E. 107.11-ft., thence S. 60°54'20" E. parrallel to and 22-ft. N'ly of said S'ly line of 236.93-ft.; thence on a curve to the right, radius 731.44=ft., a distance of 127.66-ft., chord of said curve bears S. 55°54'20" E. 127.50-ft.; thence S. 50°54'20" E. 62.56-ft. to the point of beginning.

(3) All that part of Fractional Section 5, T.4 S., R 11 E., City of Riverview, Wayne Co., Michigan described as: Beginning at a point in the E'ly line of D.T.&I. R.R. right-of-way which point is distant N. 60°54'20" W. 660.99-ft. and on the curve to the right radius 266.36-ft., a distance of 121.06-ft., chord of said curve bears N. 47°53'05" W. 120.02-ft., and N. 34°51'50" W. 15.85-ft., and on the curve to the right, radius 298.94-ft., a distance of 127.69-ft., chord of said curve bears N. 22°37'36" W. 126.74-ft. from the intersection of the W'ly line of Jefferson Ave. (River Road) 106-ft. wide with the S'ly line of "The Firestone Tire & Rubber Company" property, thence along the E'ly line of said D.T.&I. R.R. right-of-way N. 14°40'20" E. 68.62-ft.; thence on the

curve to the left radius 276.94-ft., a distance of 177.91-ft., chord of said curve bears S. 15°49'20" E. 174.87-ft., thence S. 55°46'26" W. 22.00-ft.; thence on the curve to the right; radius of 298.94-ft., a distance of 124.36-ft., chord of said curve bears N. 22°18'27" W. 123.48-ft. to the point of beginning.

(4) All that part of Fractional Section 5, T. 4 S., R. 11 E., City of Riverview, Wayne Co., Michigan described as: Beginning at a point in the Waesterly line of Jefferson Ave. (River Road) 106-ft. wide, which point is distant S. 28°55'40" W. 1103.65-ft. along the W'ly line of said Jefferson Ave. from a concrete monument at the S'ly property line of the Pennsylvania Salt Mfg. Co.; thence along the W'ly line of said Jefferson Ave. S. 28°55'40" W. 41.00-ft., thence N. 60°54'20" W. 66.03-ft.; thence on the curve to the right, radius 727.78-ft.; a distance of 127.04-ft., chord of said curve berars N. 55°54'20" W. 126.86-ft.; thence N. 50°54'20" W. 110.25-ft., thence on a curve to the left radius 709.44-ft., a distance of 120.97-ft., chord of said curve bears N. 55°46'38" W. 120-82-ft., thence along the N'ly line of the above described property N. 60°54'20" E. 421.21-ft., to the point of beginning.

ENGINEERS/PLANNERS/ARCHITECTS/SURVEYORS/GEOLOGISTS/CHEMISTS • 611 CASCADE W. PKWY., S.E., GRAND RAPIDS, MI 49506 • (616) 942-9600



WILLIAMS & WORKS

T.O. WILLIAMS, 1861-1941 • F.D. WORKS, 1880-1931 • W.B. WILLIAMS, 1895-1974

December 22, 1983

Fischer, Franklin, Ford, Simon & Hogg
1700 Guardian Building
Detroit, Michigan 48226

Attn: Mr. Thomas Woods

Gentlemen:

RE: U.S. Environmental Protection Agency et al vs.
BASF Wyandotte Corporation et al.
Case No. 80-73699

Enclosed are the results of our supplemented evaluation of the sandy beach inlet or cove area of BASF Wyandotte Corporation site located on the west shore of the Trenton Channel directly upstream from the upper Grosse Ile Toll Bridge in Riverview, Michigan.

In September 1982, Williams & Works was requested by BASF Wyandotte to perform an evaluation of existing shoreline of a parcel located on the west shore of Trenton Channel approximately eight miles upstream from the mouth of Detroit River at Lake Erie.

Initial investigation of this shoreline was completed and is represented in a report dated September 24, 1982.

In November 1983, Williams & Works was requested by BASF Wyandotte Corporation to further evaluate the beach inlet or cove area for long-term stability against erosion from anticipated wave forms and velocities. Pursuant to this request, an inspection from the land surface was made of cove area on Thursday, December 1, 1983, with Mike Repaski of BASF Wyandotte Corporation.

The area investigated consists of sandy beach located in a cove area along the northern portion of the shoreline (see Figure 1). The beach area consists of sand, fine to medium in particle size. Measurements taken for the previous report indicate a submerged slope of 10% to 12% in the cove area. Visual observations and existing contour data indicate the landward slope of the beach to be slightly less than 10%. On the date of the inspection, small ripples were observed in the shoreline sand along most of the cove area. No indications of beach scarp were observed in the cove area.

Information developed from the previous report indicates anticipated channel wave heights of 1.0 to 1.5 feet and mid-channel surface velocities 1.4 to 2.1 ft/sec. With the bottom slope of 10% to 12% channel wave forms of 1.0 to 1.5 feet would be further reduced in height to less than 1.0 feet at the cove shoreline. Lower surface velocities, less than 1.0 ft/sec, are anticipated to occur along the cove shoreline.

Sand particles of medium to fine gradation are transported by water at very low velocities. Longshore transport of the sand in the area under investigation is prevented by the "groin" like protrusion directly south of the cove area. Slight onshore/offshore movement of the sand, however, is anticipated with changing velocities and wave forms. Ripples in the shoreline sand observed on 12/1/83 are an indication of this ongoing process.

While significant changes in shoreline contours are not anticipated, placement of larger, heavier particles would resist movement and prevent landward erosion of the sandy beach in the cove area.

Gravel size particles 3/4" to 6" in diameter will resist movement from these anticipated velocities and wave forms (see Figure 1). The particles should be comprised of hard sound angular aggregates. Crushed stoned, broken concrete, and concrete spalls are examples of acceptable aggreates. Elevations for the gravel protection are based upon average high water and low water levels for

Lake Erie and Lake St. Clair for period 1968 to 1977. Design elevations were determined by extrapolating these levels to the site location and adjusting for anticipated wave heights.

Cove end areas would be subjected to wave forms and velocities approaching those of mid-channel. Larger stones are recommended in these end areas to provide protection of the shoreline (see Figure 2). Broken concrete, limestone, and quarry spalls are examples of acceptable aggregates.

If you should have any questions or comments concerning the contents of the report, please do not hesitate to call.

Yours truly,

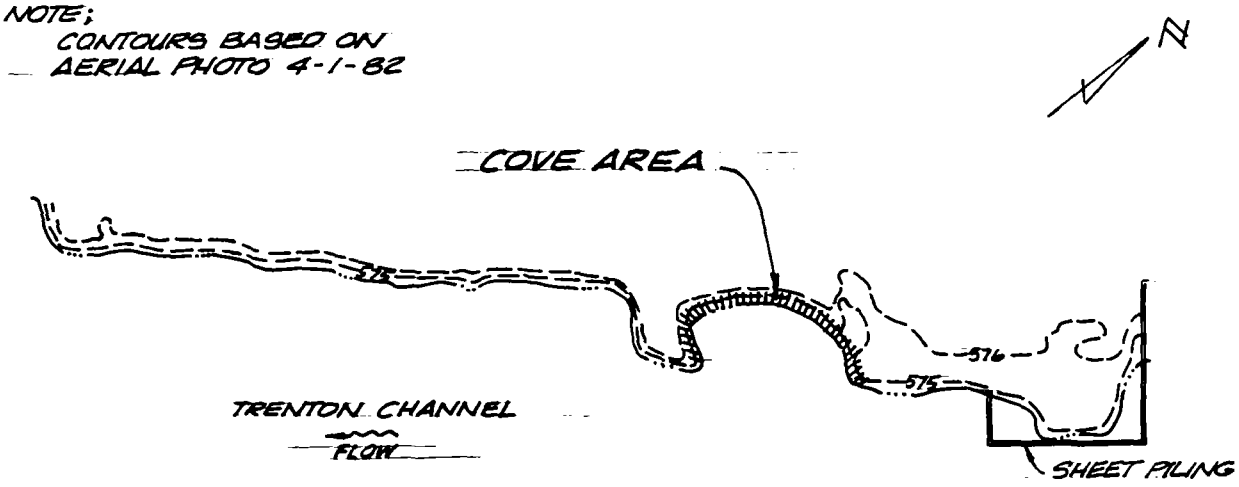
WILLIAMS & WORKS

Robert Masselink

Robert Masselink, P.E.
Project Engineer

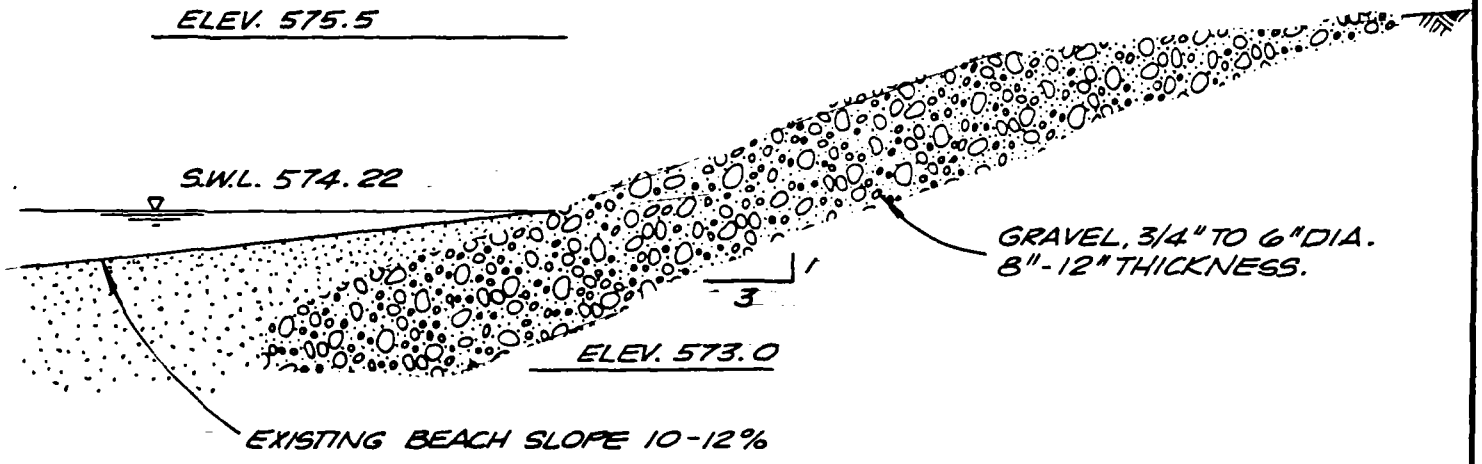
RM/jvh
Enclosures
cc: Mr. Keith Fry

NOTE;
CONTOURS BASED ON
AERIAL PHOTO 4-1-82



EXISTING SHORELINE

NO SCALE



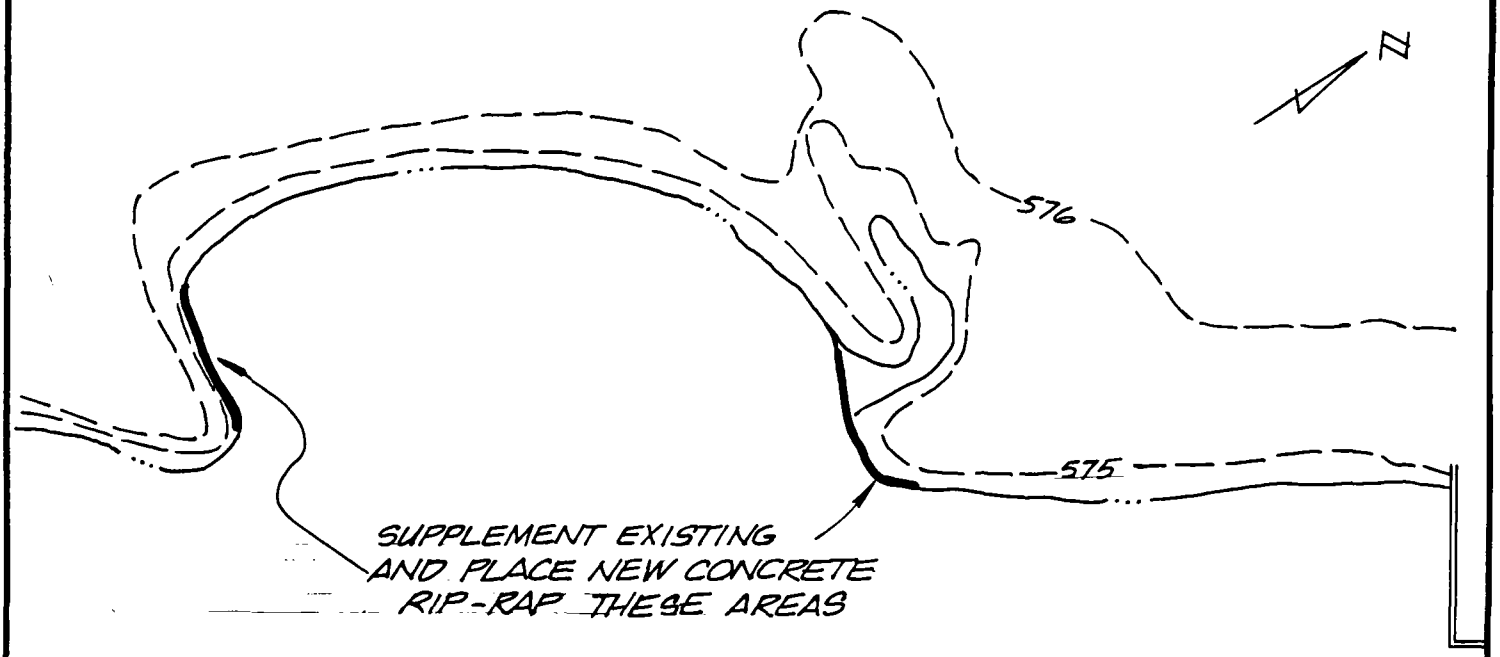
BEACH STABILIZATION COVE AREA

NO SCALE

#87167

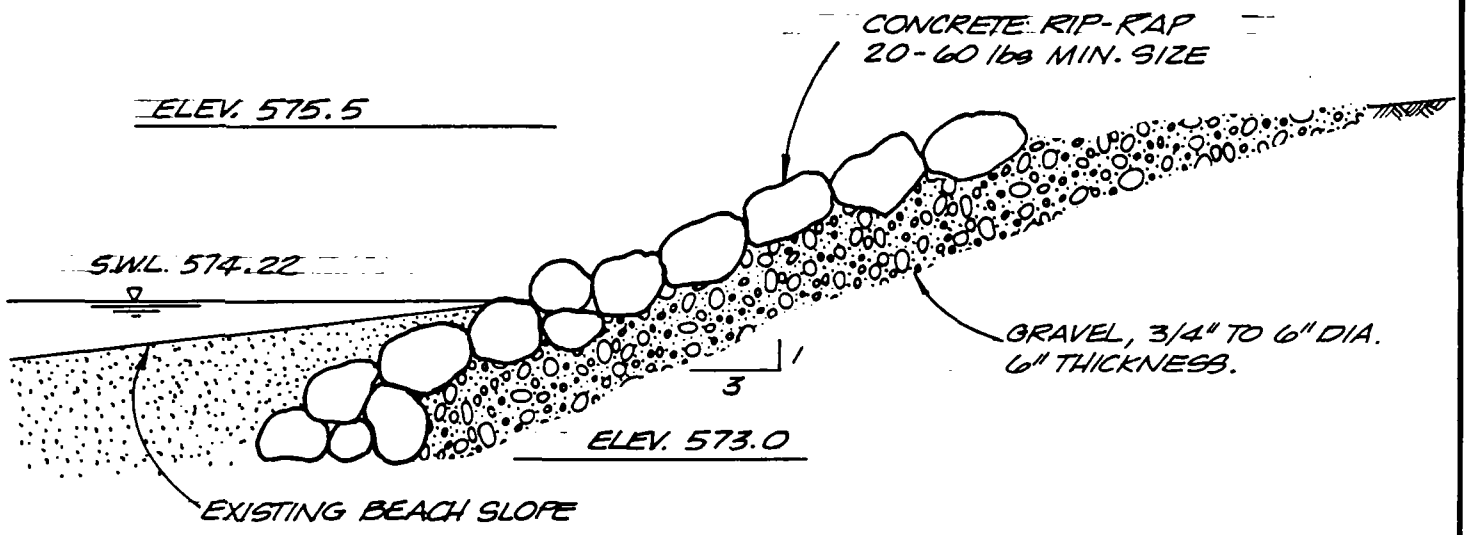
FIG. 1

WILLIAMS & WORKS
ENGINEERS/SURVEYORS/PLANNERS/ENVIRONMENTALISTS
611 CASCADE WEST PARKWAY, S.E., GRAND RAPIDS, MICHIGAN 49506



COVE AREA PLAN

SCALE 1"=50'



BEACH STABILIZATION COVE ENDS

NO SCALE

#87167

FIG. 2

WILLIAMS & WORKS
ENGINEERS/SURVEYORS/PLANNERS/ARCHITECTS
911 CASCADE WEST PARKWAY, S.E. GRAND RAPIDS, MICHIGAN 49506

ENGINEERS/PLANNERS/ARCHITECTS/SURVEYORS/GEOLOGISTS/CHEMISTS • 611 CASCADE W. PKWY., S.E., GRAND RAPIDS, MI 49506 • (616) 942-9600

Document #2

WILLIAMS & WORKS

T.O. WILLIAMS, 1861-1941 • F.D. WORKS, 1880-1931 • W.B. WILLIAMS, 1896-1974

September 24, 1982

Fischer, Franklin, Ford, Simon & Hogg
ATTN: Mr. Thomas Woods
1700 Guardian Building
Detroit, Michigan 48226

RE: U.S. Environmental Protection Agency et al vs.
BASF Wyandotte Corporation et al. Case No. 80-73699

Gentlemen:

Enclosed are the results of our evaluation of the shoreline stability of BASF Wyandotte Corporation site located on the west shore of the Trenton Channel directly upstream from the upper Grosse Ile Toll Bridge in Riverview, Michigan.

If you should have any questions or comments concerning the contents of the report, please do not hesitate to call.

Yours truly,

WILLIAMS & WORKS, INC.

Robert Masselink

Robert Masselink, P.E.

Enclosures

Copy: Mr. Keith Fry

/sv

CONFIDENTIAL
SUBMITTED FOR PURPOSE OF
SETTLEMENT NEGOTIATIONS ONLY

(U.S.D.C., E.D. Mich., Civil Action No. 80-73699)

Exhibit I

SITE LOCATION/DESCRIPTION

The property under consideration is located on the west shore of the Trenton Channel, part of the Detroit River connecting Lake St. Clair and Lake Erie. The property is situated approximately eight miles upstream from the mouth of the Detroit River at Lake Erie. The land form comprises approximately 30 acres of which 1,200 lineal feet is shoreline along the Trenton Channel.

The land surface is generally flat in character with numerous mounds or small hills. There is an elevation difference of approximately 4.0 ft from the west edge of the property to the eastermost shoreline.

BACKGROUND INFORMATION

The readily available data was compiled and evaluated. Sources of readily available data used include:

1. BASF Wyandotte records which relate to the manner in which the shoreline was filled over the course of several years.

2. National Oceanographic and Atmospheric Administration charts of the Trenton Channel Nos. 14848, 14853, and 14854.

3. Phase II report on Great Lakes Flood Levels prepared by U.S. Army Corps of Engineers: June 1978.

4. Mean Velocity and Flow Distribution in the Lower Detroit River; U.S. Army Corps of Engineers.

5. 1982 Daily Mean Water Levels on Lower Detroit River, National Oceanographic and Atmospheric Administration, Rockville, Maryland.

6. Shore Protection Manual; U.S. Army Corps of Engineers, Vol. 1, II, III; 1977.

Aerial photographs at a scale of 1"=330' were completed over the site by others in April, 1982. A topographic map with 1 ft contour intervals was developed by others from these photographs. A reduced copy of this map was used to develop Fig. 1 included in this report.

EXISTING SHORELINE

On August 31, 1982, a shoreline inspection was made to assess the existing condition of the shoreline under consideration. Depth soundings were completed at various locations to estimate the extent of shoreline protection and slope of the shoreline bottom. Surface

Examination of company records suggest the existing shoreline protection, with the exception of the sheet pile wall, was installed from 1962 to approximately 1967. Records further reveal that demolition rubble consisting of broken concrete, bricks, cinders, cobbles, and boulders were the principal materials of construction. In addition, concrete cell tops and bottoms, remnants from a plant chlorine production process, were used to stabilize the eastward face of jetty-like protrusions along the northern shoreline.

Inspection of materials of the existing shoreline on August 31, 1982 indicate principally gravel, cobbles, and rubble fill. As anticipated from company records, the rubble fill was found to contain broken concrete, bricks, and small boulders. In addition, concrete cell remnants were found on the east face of the jetty-like protrusions (see Fig. 1 and appended photographs).

Random soundings taken along the shoreline indicate the gravel and rubble fill extend eastward to a minimum water depth of 3.0 ft, 20 to 25 ft from the existing shoreline. Within this distance, shoreline bottoms slopes were measured at 12-15%. Gravelly soils were found to extend shoreward 10 to 15 ft along the southern shoreline. According to the topographic map, this corresponds to an approximate elevation 577.0±.

Approximately 200 l.f. of the shoreline is protected by a sandy beach. This area is located between the two eastward protrusions (see Fig. 1). Soundings indicate the sand material extends eastward a minimum of 20 ft with a shoreline bottom slope of 10-12%.

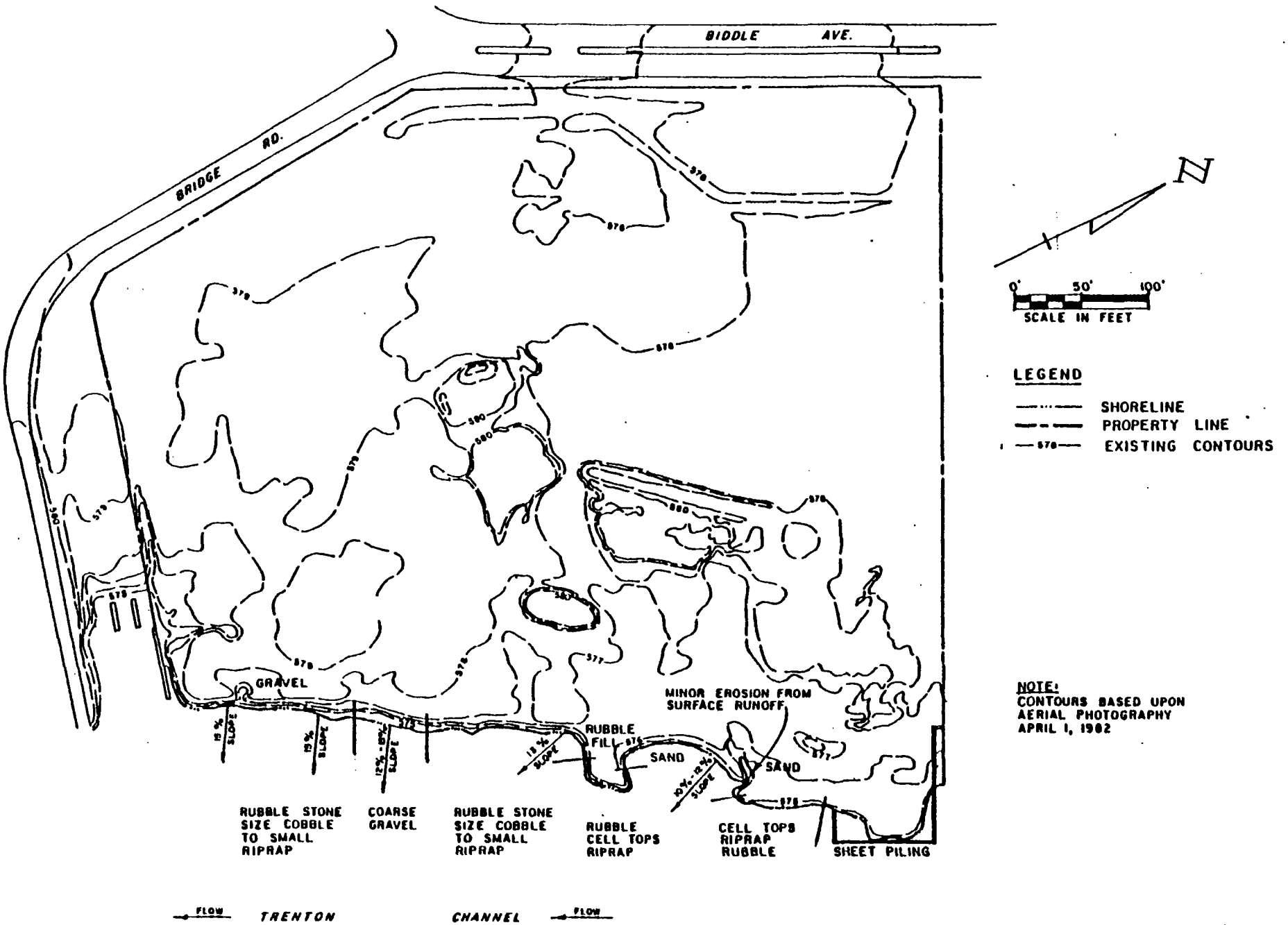
There is an area of minor erosion at the northern tip of the beach inlet. This erosion extends landward and is most likely the result of land surface runoff to the channel rather than shoreline erosion.

On the date of the inspection, no areas of significant shoreline erosion were observed.

EROSION

The location of the site, being approximately eight miles upstream from Lake Erie and land forms such as Grosse Ile, prevents Lake Erie generated waves from impacting the site shoreline. According to Corps of Engineers personnel, a temporary water level rise or storm surge of 1 to 2 ft, however, may occur within the Trenton Channel as a result of Lake Erie storms.

For the formation of waves, fetch length and width are limited by channel configuration and Grosse Ile. Consequently, channel wave forms consist of vessel wakes and small wind induced waves. Based upon the preceding, a maximum anticipated wave height of 1.0 to 1.5 ft is reasonable. The existing gravel and rubble fill provide adequate shoreline protection against erosion from wave heights of this magnitude.



EXISTING SHORELINE

FIG. 1

WILLIAMS & WORKS
ENGINEERS/SURVEYORS/PLANNERS/GEOLOGISTS

Surface velocities on the date of site inspection were measured at 1.9 to 2.0 ft/sec. at the center of the channel. Shoreline velocities were measured at random locations and found to vary from 0.15 to 0.5 ft/sec. Measurements indicated shoreline velocities to be lowest in areas directly downstream from the jetty-like protrusions and in the beach inlet area.

Surface velocity records from the Corps of Engineers indicates surface velocities to vary from 1.4 to 2.1 ft/sec. at the center of the channel in the area under consideration.

With the present shoreline configuration and bottom slopes, shoreline velocities will always be less than mid-channel velocities. On the date of the inspection, shoreline velocities were found to be significantly less on the order of 10 to 25% of mid-channel values.

Higher velocities, approaching mid-channel surface velocities, are anticipated to occur in the deeper water on the east slope of the jetty-like protrusion. The existing shore protection in this area consisting of gravel, rubble fill, and concrete cell remnants, provide adequate protection against erosion by velocities approaching maximum mid-channel value of 2.1 ft/sec.

Lower velocities, less than 1.0 ft/sec. are anticipated to occur along the remaining shoreline. Existing shoreline protection consisting of gravel as rubble fill provides adequate protection against erosion by velocities less than 1.0 ft/sec.

Due to the relative size of the sand particles in the beach inlet area, they can be transported by water at lower velocities than gravel or other coarser particles. With time and changing velocity and wave form conditions, the sand sediments may be transported to different locations within the beach inlet area. This is an ongoing process and is anticipated to occur in most sandy beach areas. While it does not affect the overall stability of the shoreline, with time there may be slight changes in the shoreline contours as sand is transported from one location to another. This ongoing process may be alleviated by the addition of coarser materials along the sandy beach area such as the gravel and rubble fill found along the remaining shoreline.

velocity measurements were taken at random locations along the shoreline and at the center of the channel to establish relative relationships. Photographs were completed to illustrate existing shoreline protection.

SUMMARY/CONCLUSIONS

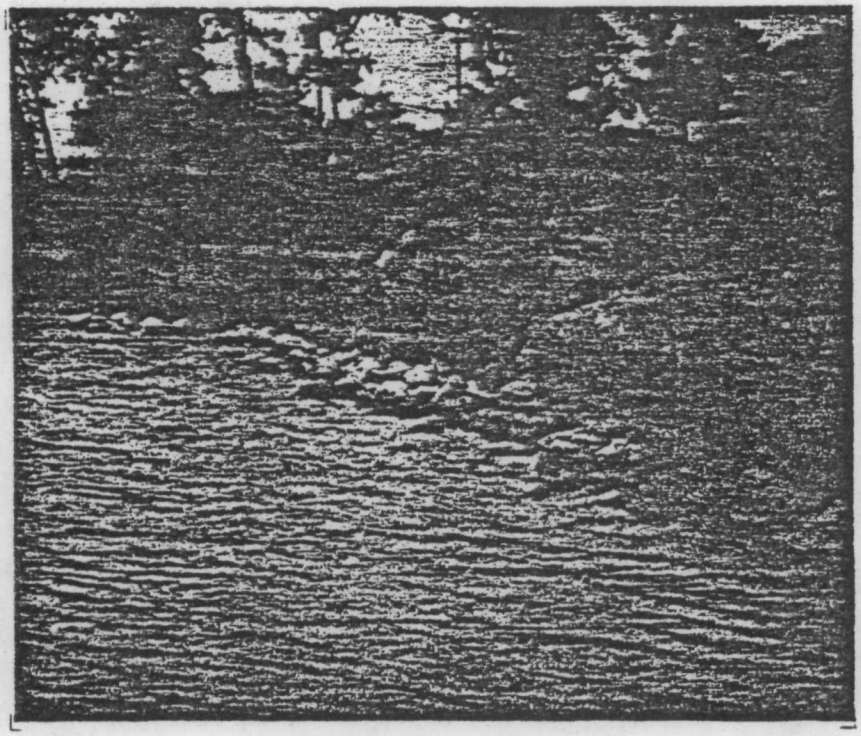
1. The inspection on August 31, 1982 revealed no observed significant areas of shoreline erosion.

2. Due to the presence of existing gravel, cobbles, and rubble fill, the existing shoreline is stable and unlikely to be eroded from anticipated wave forms and surface velocities.

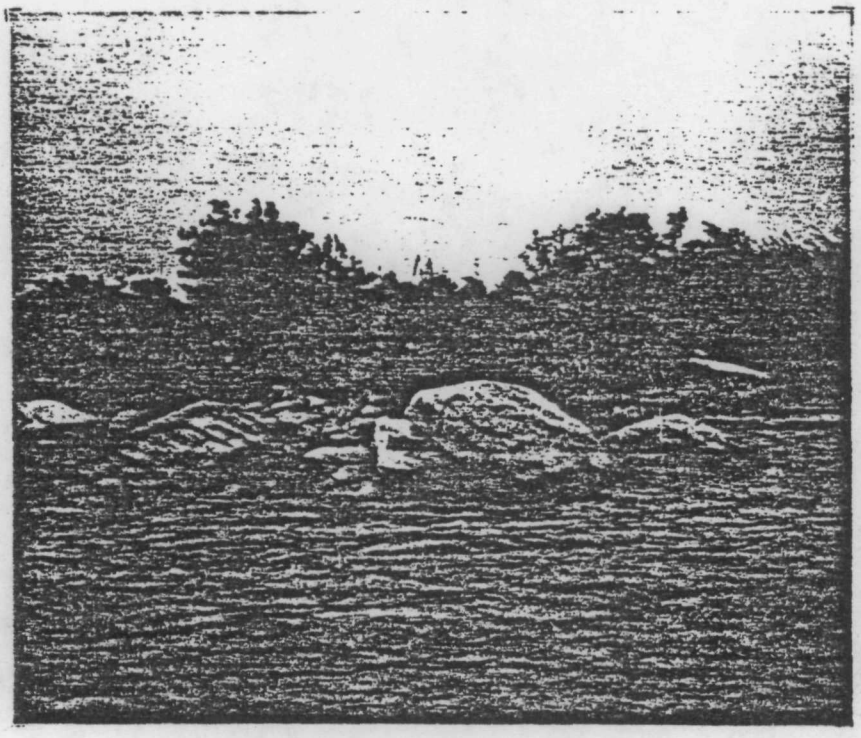
3. Minor erosion was observed at the north end of the sandy beach inlet; however, it is most likely caused by land surface runoff rather than shoreline erosion.

4. The sandy beach inlet area may be subjected to slight changes in shoreline configuration with time. These slight changes do not affect the overall stability of the shoreline and are anticipated to occur in sandy beach areas.

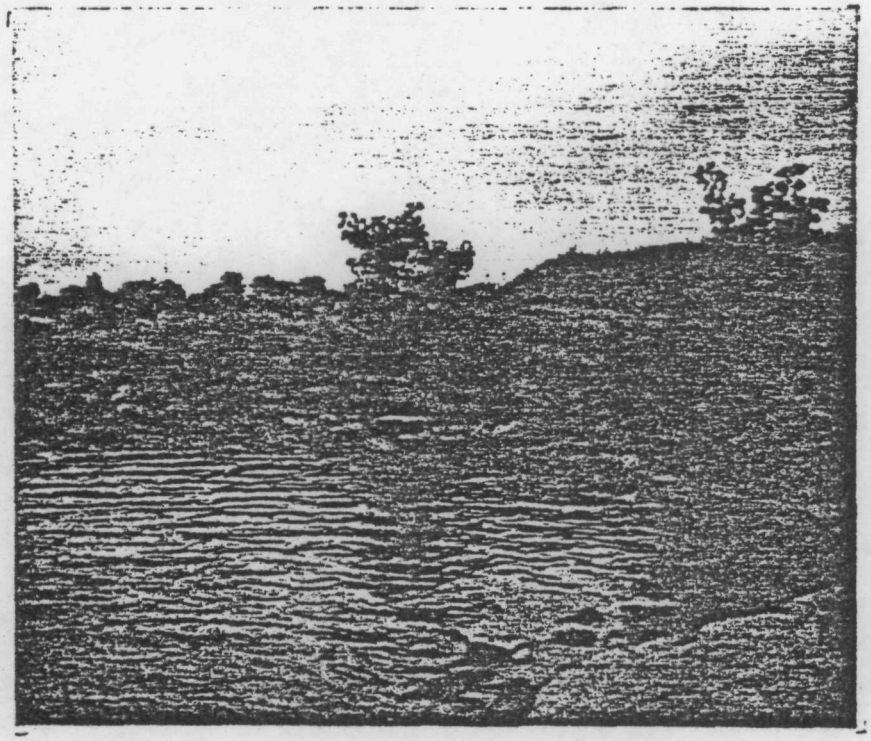
APPENDIX A



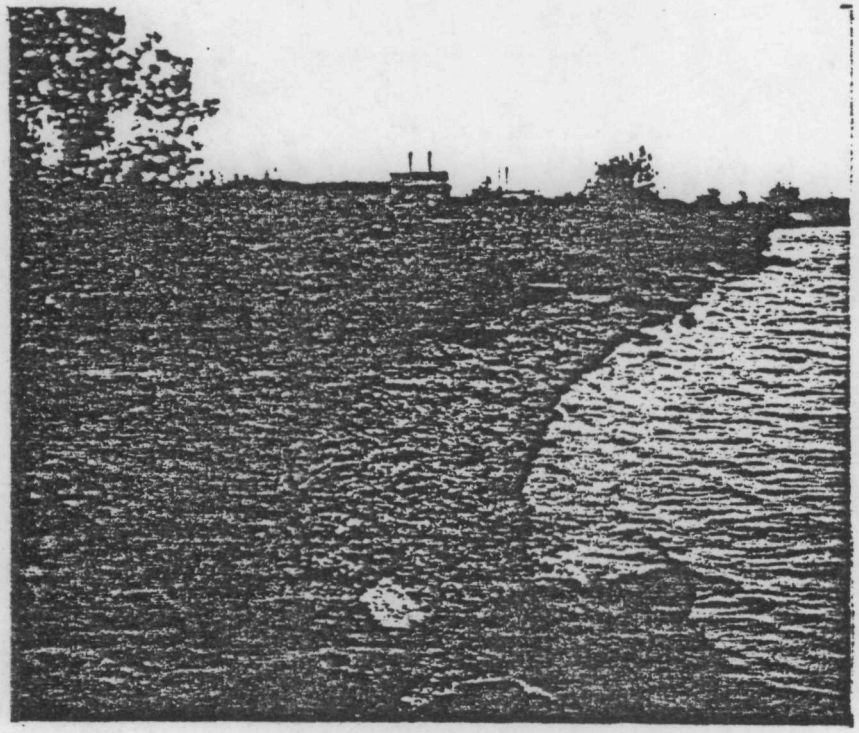
Southern most shoreline showing gravel and small rip rap.



Shoreline at tip of jetty like protrusions showing cell tops and bottoms.



Shoreline directly south of penninsula showing gravel & small rip rap.



Graveled shoreline

Recommended Practice For Plugging Soil Borings

This document is intended to supplement "Recommended Practice for Soil Borings", Manual No. 1 as issued by the Southeastern Branch of the Michigan Section of the American Society of Civil Engineers in April, 1969. The purpose of this document is to outline recommended practice for the backfilling, plugging, and sealing of test borings. The methods recommended herein, or as amended, are intended to restore the area of the test borings to its original condition in order to prevent migration of fluids or gases from one strata to another and to minimize the possibility of surface or sub-surface pollution. These methods have been tested and found effective in the Great Lakes area under most conditions. Where conditions are such that the methods presented herein are not applicable, supplemental procedures should be employed under the direction of a qualified Engineer.

1.0 Drilling Soil Borings - Soil borings shall be made in accordance with the "Recommended Practice of Soil Borings" mentioned above. Drilling may be by any of the methods specified therein subject to the limitations set forth for each method.

2.0 Plugging Soil Borings - The plugging of soil borings shall be accomplished in accordance with the methods set forth herein. On the basis of the field logs prepared during the drilling of the boring, the hole shall be assigned to one of the categories listed below and the appropriate plugging method utilized.

SOIL BORING CATEGORIES AND PLUGGING METHODS	Natural Soil	Cement Grout	Pressure Cement Grout	Bentonite
Boring through Sand above or to Bedrock				
A. No ground water	Yes (7)			
B. Ground water	Yes (7)			
Boring through Sand into Bedrock				
A. No ground water	Yes (7)			
B. Ground water		Yes (1)		
C. Water in rock		Yes (1)		
D. Artesian water in rock			Yes (1)	
Boring through Clay above or to Bedrock				
A. No ground water	Yes (7)			
B. Ground water	Yes (7)			
Boring through Clay into Bedrock				
A. No ground water	Yes (7)			
B. Ground water				Yes (7)
C. Water in rock		Yes (1)		
D. Artesian water in rock			Yes (2)	
Boring through Clay above Sand, to or into Bedrock				
A. No ground water	Yes (7)			
B. Ground water in sand or rock		Yes (3)		Yes (3)
Boring through alternate strata of Sand and Clay				
A. One layer of sand	Yes (7)			
B. One layer of clay				Yes (4)
C. Several alternate layers				Yes (4)
Borings encountering Artesian Water		Yes (8,5)	Yes (6)	
Borings encountering Gas, Coal, Sulphurous or other noxious substances at any depth		Yes (8,5)	Yes (6)	

APPENDIX C

1. Grout to top of rock.
2. Grout to minimum 5 feet above rock.
3. Grout to minimum 5 feet above sand.
4. Backfill to top of top clay stratum.
5. Grout entire boring.
6. Pressure grout at source
7. Fill entire hole.
8. Place plug to elevation near source and grout remainder of hole.

GROUND WATER shall mean water that is free to move through a soil mass under the influence of gravity. SAND shall mean any predominantly granular material which will permit the flow of ground water. Includes silty sand , gravel, cinder fill, etc. CLAYshall mean any predominantly fine-grained material which is relatively impermeable and which will not permit the flow of ground water. Includes silt, silty clay, sandy clay, etc. NATURAL SOIL shall mean material that is removed from the drill hole. ARTESIAN WATERshall mean any water which rises above the level at which it is encountered. CEMENT GROUTshall mean Portland cement mixed with sufficient water to provide suitable consistency for placing or pumping. PRESSURE GROUTING shall mean injecting cement with a positive displacement pump, or other suitable devices which will maintain a pressure higher than the artesian head. BENTONITEshall mean any properly processed expansive colloidal clay. Cement grout may be used in lieu of Bentonite.

Borings drilled through soils or rock with profile not described in the forgoing categories must be effectively sealed to prevent movement of water between aquifers, or leakage at ground surface.

3.0 Special Cases

3.1 Piezometer or Standpipe Installation-Where required by the Engineer or owner, a piezometer or standpipe shall be installed in the test boring upon completion of drilling. The piezometer or standpipe shall be sealed in a manner consistent with the requirements for such installation and, insofar as practicable, in conformance with the plugging methods set forth in Section 2.0 above. At such time as the piezometer is no longer required, it shall be sealed by grouting or by other appropriate means

3.2 Holes Not Plugged — Where the requirements of the owner or Engineer dictate that holes shall be left open, casings shall be left in place to prevent caving of the holes or migration of fluids or gases from one stratum to another.At such time as the requirement to maintain the hole open ceases, the hole shall be plugged in accordance with the methods specified in 2.0 above.

4.0 Plugging records - The drillers' field notes and borings log shall include the following information regarding the plugging of the borings:

A. Plugging method utilized.
B. Quantities of Bentonite, grout, or other material utilized in plugging.
C. Any unusual conditions encountered during plugging such as excessive take of grout materials, leakage exterior of casing, etc.
D. State if casing was placed and left in hole.

ACKNOWLEDGEMENT

These recommendations were prepared by a sub-committee appointed on September 22, 1971, at a regular meeting of the Soil Mechanics and Foundation Committee, Southeastern Branch, Michigan Section, American Society of Civil Engineers. The effort of many individuals and organizations who assisted the committee is gratefully acknowledged. The following individuals have participated most directly in the preparation: Grover W. Fox, Sub-Committee Chairman; Raymond P. Eilliott, P.E.; Kenneth W. Kramer, P.E.; Jerome C. Meyer, P.E.; J. N. Hargrave-Thomas; Harley Corbin; Khalid Hindo, P.E.; Garrett H. Evans, P.E., Technical Group Chairman, 1970.

Printed by Southeastern Branch, Michigan Section
American Society of Civil Engineers

MDSH METHODS OF PLUGGING DRILL HOLES

Mineral Well Act

Act No. 315 of Public Acts of 1969

Procedures for Plugging Test Borings

The proposed procedure of the Michigan Department of State Highways follows:

ORDINARY CONDITIONS

All test holes, except as listed below, are to be filled completely with suitable material removed from the hole or like material from another source. The top 5 ft will be compacted by hand tamping or hydraulic auger pressure.

The surface area around the test hole site will be cleaned and returned as nearly as possible to the original state.

MULTIPLE AQUIFERS

When multiple aquifers (water-bearing sands between clay layers) are encountered, the impervious zones or zones between aquifers will be sealed with a bentonite slurry or cement grout as deemed suitable.

BEDROCK CORING

All water-bearing bedrock will be cement grouted.

ARTESIAN WATER

When artesian water is encountered in hydraulic (wash) borings utilizing 2-in. flush joint casing, it is proposed to terminate the flow by forcing a 5-ft minimum length of 2-1/2 inch diameter plugged steel pipe down the hole. This plug will usually be driven to the top of the aquifer. The remainder of the hole will be filled with cement grout or concrete.

When artesian water is encountered in auger borings the test hole will be cleaned out and grouted by pouring cement grout or concrete into the hole. When borings are made with the hollow-stem auger, the hole will be plugged by pouring or forcing grout or concrete down the stem and keeping the stem full as the auger is raised or down the hole itself if conditions permit.

GAS

Methane

When methane gas is encountered the gas will be vented into the air and allowed to deplete itself. Burning will depend on surrounding conditions such as open country, rural areas, or commercial and residential areas. Where conditions will not allow the burning of the gas, it will be vented into the air until the gas pocket is depleted. After depleting of the gas the hole will be grouted as above. The local authorities will be notified and corrective methods coordinated with them.

GAS

Hydrogen Sulfide

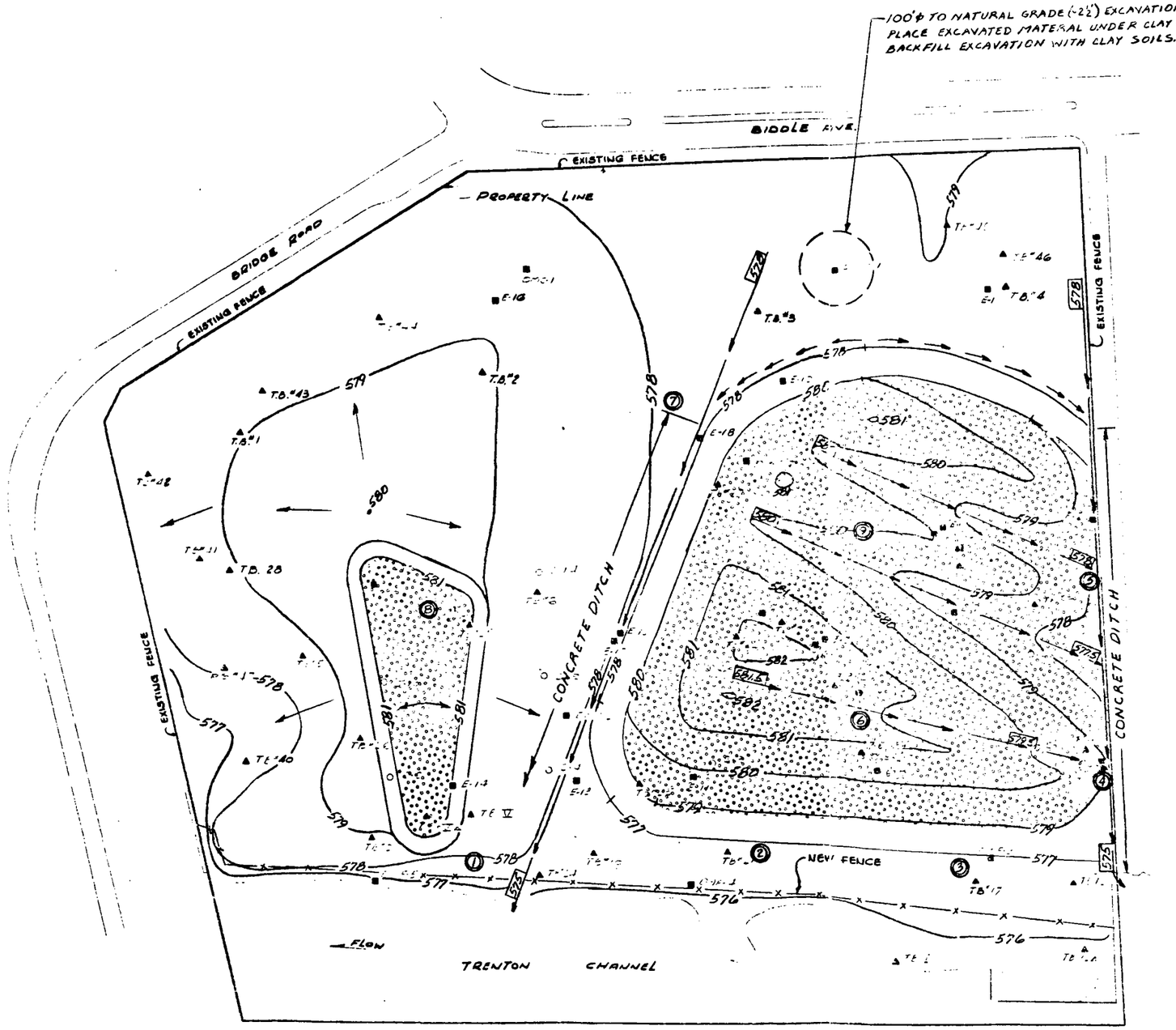
When hydrogen sulfide gas is encountered in wash borings using 2-in. diameter casing, it is proposed to seal the hole with a 5-ft minimum section of 2-1/2 inch diameter plugged steel pipe. This pipe will be driven to the lowest elevation possible and the remainder of the hole filled with cement grout or concrete.

When hydrogen sulfide gas is encountered with the hollow-stem auger, the seal will be made by pouring or pumping cement grout or concrete down the augers and raising the augers as the grout or concrete fills the hole.

When either methane or hydrogen sulfide gas is encountered by a MDSH crew, the Highway Safety Section will be notified.

CEMENT GROUT

Cement grout will consist of a thick slurry of Portland Cement and water to which may be added sand and calcium chloride. The ratio of five to six gallons of water to a 94-lb sack of cement produces a suitable grout.



LEGEND

- ▲ TEST BORINGS (TB-1 THRU TB-14) BY MATEO DRILLING CO., UNDER THE SUPERVISION OF NEVER, TIGER & HINDO, LTD. ON MAY 24-25 & 31 & JUNE 1, 1978.
- ▲ TEST BORINGS (TB-15 THRU TB-35) BY COPRIN DRILLING CO. UNDER THE SUPERVISION OF NEVER, TIGER & HINDO, LTD. & APPLIED ENVIRONMENTAL RESEARCH, INC. ON JAN. 11 & 12, 1979.
- ▲ TEST BORINGS (TB-36 THRU TB-46) BY COPRIN DRILLING CO. UNDER THE SUPERVISION OF NEVER, TIGER & HINDO, LTD. ON JAN. 30 & 31, 1979.
- ▲ PROFILE BORING (PB-47) BY COPRIN DRILLING CO., UNDER THE SUPERVISION OF NEVER, TIGER & HINDO, LTD. ON JAN. 31, 1979.
- ▲ TEST BORINGS (TB-I THRU TB-XII) BY COPRIN DRILLING CO. UNDER THE SUPERVISION OF NEVER, TIGER & HINDO LTD. AND APPLIED ENVIRONMENTAL RESEARCH, INC. ON NOV. 16, 1978.
- ■ PIEZOMETER LOCATIONS (E-1 THRU E-19) BY TOLEDO TESTING LABORATORY, INC. UNDER THE SUPERVISION OF ECOLOGY & ENVIRONMENT, INC. ON JAN. 14, 15, 16, 21, 22, 1981
- ■ PIEZOMETER LOCATIONS (DMC-1 THRU DMC-3 & DMF-1 THRU DMF-8) BY DAMES & MOORE IN MARCH 19, 20, 21 & 22, 1979.
- ○ SAMPLING LOCATIONS (S-1 THRU S-17) BY APPLIED ENVIRONMENTAL RESEARCH ON DEC. 12 & 13, 1979.
- (3) MONITOR WELLS TO BE INSTALLED BY BWC.

NOTES:
1. FINAL CONTOUR LINES TO BE ADJUSTED TO SATISFY ACTUAL FIELD CONDITIONS.
2. -579- INDICATES FINAL CONTOUR ELEVATION.
3. [575] INDICATES FINAL DITCH INVERT.
4. →→ INDICATES FINAL DRAINAGE PATTERNS.
5. ⁘ INDICATES MINIMUM 2' COMPACTED CLAY COVER WITH 2% FINAL GRADE SLOPE AND NOMINAL 6" OF CLAY LOAM TOPSOIL.

(U.S.D.C., E.D. MICH., CIVIL ACTION NO. 80-73699)

APPENDIX "D"

TMR 12-12-80	RIVERVIEW SITE	
	[illegible]	SITE
BASF Wyandotte Corporation	1"=80'-0"	80-554 0

WORK SAFELY

APPENDIX E

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

UNITED STATES OF AMERICA, Plaintiff, FRANK J. KELLY, Attorney General for the State of Michigan, FRANK J. KELLY, *ex rel.* MICHIGAN NATURAL RESOURCES COMMISSION, MICHIGAN WATER RESOURCES COMMISSION, and HOWARD A. TANNER, Director of the Michigan Department of Natural Resources, Intervenor-Plaintiffs, v. BASF WYANDOTTE CORPORATION and FEDERAL MARINE TERMINALS, INC. Defendants.	JUDGE RALPH B. GUY, JR. Civil Action No. 80-73699

NOTICE OF ENTRY OF CONSENT DECREE

Notice is hereby given that a Consent Decree has been entered by the Court in this case, affecting the premises described in Appendix A attached hereto.

This Consent Decree includes a plan for the containment of industrial waste materials on the property and certain ongoing requirements which may affect the use of such property.

A copy of the Consent Decree may be obtained from the Clerk of the United States District Court for the Eastern District of Michigan or from:

Waste Management Division - Remedial
Response Branch
United States Environmental Protection
Agency - Region V
230 S. Dearborn Street
Chicago, Illinois 60604

Director
Michigan Department of Natural
Resources
Box 30028
Lansing, Michigan 48909

Dated:

Ralph B. Guy, Jr.
United States District Judge